

REMARKS

Status of the Claims

Upon entry of the amendment above, claims 1-23 and 25-54 will remain pending, claims 1, 19, 30, and 47 being independent. Claims 10-12 stand withdrawn from consideration as being directed to non-elected invention(s).

Summary of the Office Action

Claim 1 is rejected under 35 USC §112, second paragraph, as being indefinite. Claims 2-9, 13-18, 41, and 44 are objected to for depending from claim 1.

Claims 1, 8, 9, 13, 14, 16, and 18 are rejected under 35 USC §102(e) as being anticipated by DACHGRUBER et al. (U.S. Patent No. 6,360,454, hereafter "DACHGRUBER"). Claims which specify a beveled notch, previously rejected over DACHGRUBER, no longer so rejected.

Claims 1-5, 8, 9, 14, and 18 are rejected under 35 USC §102(b) as being anticipated by RATHMELL (U.S. Patent No. 4,043,059, hereafter "RATHMELL '059").

Claims 1-9, 14, 17-23, and 25-47 are rejected under 35 USC §102(b) as being anticipated by RATHMELL (U.S. Patent No. 3,968,578, hereafter "RATHMELL '578").

Claims 13, 15, 16 are rejected under 35 USC §103(a) as being unpatentable over RATHMELL '578.

Response to the Office Action

A. Summary of Amendments

In the amendment above, paragraphs 0037, 0039, and 0040 of the specification have been amended to provide antecedent bases for claims newly added above. No prohibited new matter has been added.

Claims 3, 6, 13, 18-23, 25, 34, 40, and 45-47 have been amended to improve their form.

New dependent claims 48-54 have been added.

B. Withdrawal of Rejection Under 35 USC §112, Second Paragraph

Applicant respectfully traverses the rejection of claim 1 under 35 USC §112, second paragraph, as indefinite.

Specifically, the assertion that “[t]he use of different terms to refer to an element is ... not acceptable in a claim” is not true. In this regard, reference is made to Section 2173.05(o) of the Manual of Patent Examining Procedure:

There is no *per se* rule that "double inclusion" is improper in a claim. *In re Kelly* [sic, *Kelley*], 305 F.2d 909, 916, 134 USPQ 397, 402 (CCPA 1962) ("Automatic reliance upon a 'rule against double inclusion' will lead to as many unreasonable interpretations as will automatic reliance upon a 'rule allowing double inclusion'. The governing consideration is not *double inclusion*, but rather is what is a reasonable construction of the language of the claims."). Older cases, such as *Ex parte White*, 759 O.G. 783 (Bd. App. 1958) and *Ex parte Clark*, 174 USPQ 40 (Bd. App. 1971) should be applied with care, according to the facts of each case.

Applicant submits that the claim is clear regarding the expressions “means for allowing bending,” “one abutment,” and “means for limiting bending.” As specified in the claim, the “means for allowing bending” comprises a bending zone that *includes* at least “one abutment.” Further, as also specified in the claim, the abutment *comprises* “means for limiting bending.” Thus, the relationship among the three expressions is clearly set out.

In terms of the illustrated non-limitative embodiment, because, e.g., the edges of the abutment are spaced apart prior to flexing of the frame in the bending zone, the frame “allows” bending through a certain angle. However, once that certain angle of flexion is reached, the “means for allowing bending,” includes a “means for limiting bending,” inasmuch as the edges of the abutment are moved toward each other by a certain amount.

C. The Allowance of Claim 1 and Claims Depending Therefrom

Applicant kindly requests reconsideration and withdrawal of the rejections of claim 1 and the claims depending therefrom.

1. DACHGRUBER

Claim 1 is directed to a protective article for the joint of a person's body (such as an ankle joint), the rigid frame of such protective article comprising the following:

means for allowing bending of the protective article and bending of the joint along at least one bending direction through a predetermined angle of bending, said means comprising at least one bending zone having at least one abutment with opposed edges, said opposed edges being spaced apart a predetermined amount in a first and unbent position of the protective article, and spaced apart by an amount less than said predetermined amount in a second and bent position of the protective article;

in said second and bent position of the protective article, said abutment of said means for allowing bending comprising *means for limiting bending of the frame and limiting bending of the joint along said bending direction at said predetermined angle of bending*;

said rigid frame having a rigidity of a magnitude to avoid hyper-flexion of the joint beyond said predetermined angle of bending while the protective article is in said second and bent position. (Emphasis added)

Among other things, claim 1 includes at least one means-plus-function limitation, emphasized in bold and italics above. Pursuant to the provisions of 35 USC §112, sixth paragraph, that limitation "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." As stated in *In re Iwahashi*, 888 F.2d 1370, 1375 n.1, 12 USPQ2d 1908, 1912, n.1 (Fed. Cir. 1989), "Section 112 ¶ 6 cannot be ignored when a claim is before the PTO any more than when it is before the courts in an issued patent."

Therefore, the recited "means for limiting bending of the frame and limiting bending of the joint ..." must be interpreted to cover the corresponding structure and material described in the specification and equivalents thereof.

Based upon an interpretation of claim 1 set forth above, the elements 98 and 100 of DACHGRUBER (identified near the middle of page 4 of the Office action as “notches” and “abutments,” respectively) would not be found to cover Applicant’s abutments to limit bending, nor their equivalents. There is no such disclosure in DACHGRUBER and the apparent contortion that would be necessitated to bring any of elements 98 or 100 into a position to limit bending would not correspond to structure or material described by Applicant, or equivalents thereof.

In Section 2111.01 of the Manual of Patent Examining Procedure (MPEP), the USPTO cites an unpublished decision of the Court of Appeals for the Federal Circuit, which is very relevant to the issues presented in the rejection of Applicant’s claims:

In re Weiss, 989 F.2d 1202, 26 USPQ2d 1885 (Fed. Cir. 1993) (unpublished decision - cannot be cited as precedent) (The claim related to an athletic shoe with cleats that "break away at a preselected level of force" and thus prevent injury to the wearer. The examiner rejected the claims over prior art teaching athletic shoes with cleats not intended to break off and rationalized that the cleats would break away given a high enough force. The court reversed the rejection stating that when interpreting a claim term which is ambiguous, such as 'a preselected level of force,' we must look to the specification for the meaning ascribed to that term by the inventor." The specification had defined "preselected level of force..." as that level of force at which the breaking away will prevent injury to the wearer during athletic exertion. It should be noted that the limitation was part of a means plus function element.)

As in the decision cited by the USPTO, a proper interpretation of Applicant’s claim limitation “means for limiting bending of the frame and limiting bending of the joint along said bending direction at said predetermined angle of bending” requires that reference be made to the specification to determine “the meaning ascribed to that term by the inventor.” Such reference would establish that Applicant’s specification defines the predetermined angle as one that protects the joint from injury by preventing hyper-flexion of the joint. See, e.g., paragraphs 0008, 0010, 0030 and 0031.

Further, reference to paragraph 0030 of the specification would establish that *limiting* bending means that bending via the abutment(s) is stopped, and that “the constituent material of the frame 1 itself recovers the bending forces”

DACHGRUBER fails to teach or suggest any such *limiting* of bending. In fact, there is no disclosure of a limiting of bending at all in DACHGRUBER. In contrast to Applicant’s invention, the function of DACHGRUBER’s stiffener is to affect the stiffness of the boot, as evidenced in the description provided by the paragraph beginning in column 3, line 59, to column 4, line 16, where DACHGRUBER describes the stiffener 24 being fitted within a recess 40 of the tongue 22. In one embodiment, the recess 40 includes an “open area 42” that is provided to allow the stiffener to have no appreciable affect on the flexing of the boot: “For example, the recess 40 may be configured to allow the footwear to be flexed up to an angle of 45° from its rest position, without the end of the stiffener abutting the end of the recess.” Thereafter, the flexibility of the stiffener controls further flexing of the boot. Thus, DACHGRUBER describes his invention as allowing flexing *beyond* 45° (in contrast to certain of Applicant’s dependent claims, such as claim 16, which *limit* flexing at 45°).

In another embodiment described within the aforementioned paragraph, “it should be appreciated that the present is not limited in this respect and that the recess 40 may be made substantially the same size as the tongue stiffener 24, where the tongue stiffener 24 is not intended to move appreciably relative to the tongue 22.” (See column 4, lines 12-16.) That is, the stiffener merely affects the quality of the flexion of the boot, but no structure of the stiffener is provided for *limiting* such flexion.

The comment in the Office action that elements 98, 100 are “abutments” is believed to be erroneous. The surfaces of elements 98, 100 are not disclosed by DACHGRUBER as abutting to limit bending of the stiffener 24, nor as reaching a point at which they come together to a maximum extent which limits further bending of the stiffener 24. Affecting flexion of the stiffener “to some degree,” as specified in the rejection, does not meet the terms of the rejected claims, including the means-plus-function limitation, which specify *limiting the bending* of Applicant’s frame.

Notches 98 of DACHGRUBER, cited in the rejection as "abutments," are not abutments.

Instead, DACHGRUBER describes the notches 98 as follows (see column 7, lines 50-65):

... one or both sides 39a, 39b [of the stiffener 24] may include a plurality of *flex inducing members such as grooves or notches 98* * * * ... due in part to the presence of the grooves, the mid-section is able to *flex* to a greater extent than other portions of the stiffener. The grooves 98 may also act to minimize kinking of the mid-section of the stiffener as the tongue and stiffener are flexed. In this respect, *the grooves 98 provide controlled flexing of the stiffener* (emphasis added).

Apertures 100 of DACHGRUBER, cited in the rejection as "abutments," are not abutments.

Instead, DACHGRUBER describes the apertures 100 as follows (see column 7, line 66, to column 8, line 4):

... at least one aperture 100 may be formed completely through the stiffener 24, with the aperture 100 being shaped and dimensioned in accordance with the desired flexibility or rigidity. Like the grooves 98, the apertures 100 may also act to minimize kinking of the stiffener as the tongue and stiffener are flexed.

Thus, the apertures 100, according to DACHGRUBER, serve the purpose of that of the grooves 98, i.e., *to facilitate flexing – not to limit flexing*.

Further, regarding the *limiting* of flexing, Applicant respectfully takes issue with the statements in the rejection based upon DACHGRUBER that edges of elements 98, 100 of DACHGRUBER limit flexing "to some degree."

Applicant is not claiming limiting flexing to some degree. He is claiming limiting flexing. Limiting flexing "to some degree" can be considered analogous to a rolling stop by a motorist at a stop sign. A rolling stop is not a stop. Similarly, limiting flexing to some degree is not limiting flexing. Applicant's invention *stops* flexing at a certain angle. DACHGRUBER discloses no such teaching or suggestion.

In addition, DACHGRUBER fails to teach or suggest the invention of claim 18, which depends from claim 1. In claim 18, Applicant specifies that “the frame is fixed on a flexible and substantially inextensible membrane *against movement along the membrane.*” Neither column 4, lines 11-16 of DACHGRUBER, or other portion of DACHGRUBER support the rejection. Column 4, lines 11-16 of DACHGRUBER mentions that the previously described sliding of the stiffener relative to the tongue could be made so that it is not “intended to move appreciably relative to the tongue 22.” Nevertheless, even in that non-illustrated embodiment, the stiffener moves.

At least for the reasons advanced above, reconsideration and withdrawal of the rejection of claim 1, and claims depending from claim 1, over DACHGRUBER is kindly requested.

2. RATHMELL '059

As in the previous two Office actions, that to which Applicant now replies asserts that RATHMELL '059 includes a rigid frame. Reference is made in the Office action to Fig. 1 of RATHMELL '059, although the “rigid frame” of a “protective article for a joint of a person’s body” is not identified.

The rejection refers to elements 4 and 5 of RATHMELL '059 as corresponding to the “rigid frame.” However, in column 1, lines 35-39, RATHMELL '059 explains that the corrugated sections 4 are *flexible*. The lines of corrugation enhance the flexibility of section 4. Therefore, Applicant submits that the flexible section 4 of RATHMELL '059 and the rigid frame according to Applicant’s invention are patentably different, particularly when one interprets the above-mentioned means-plus-function limitation of claim 1.

That is, when the recited “means for limiting bending of the frame and limiting bending of the joint ...” is interpreted to cover the corresponding structure and material described in the specification and equivalents thereof, one skilled in the art would find that RATHMELL '059 fails to teach or suggest Applicant’s rigid frame and abutments or equivalents thereof.

At least for these reasons, reconsideration and withdrawal of the rejection of claim 1, and claims depending therefrom, is kindly requested.

In addition, nowhere does RATHMELL '059 disclose limiting bending at a particular angle, nor limiting bending to prevent hyper-flexion. The allegation to the contrary in the rejection is unsupported. Instead, RATHMELL '059 discloses "to make it more practical and convenient for a skier to make a major change in the flexibility of the boot." See column 1, lines 15-17.

Applicant's invention *limits* the range of movement to a predetermined angle; RATHMELL's invention modifies the *flexibility* of the movement through an unspecified angle.

Further, in claims 3 and 18, Applicant calls for the frame to be fixed on and to overlie a membrane (see Applicant's Fig. 4A, for example). Near the middle of page 5 of the Office action, elements 1, 2 in RATHMELL '059 are identified as a "membrane." Applicant respectfully traverses that position.

First, element 1 of RATHMELL '059 is a foot-covering section of a ski boot and element 2 is a leg-holding section (see column 1, lines 31, 32). Inasmuch as the rejection is premised upon elements 4, 5 of RATHMELL '059 being the frame, the frame of RATHMELL '059 does not overlie elements 1, 2. Instead, the frame extends *between* and *connects* the elements 1, 2.

Accordingly, Applicant's claims 3 and 18 are believed to be allowable over RATHMELL '059 for reasons in addition to those that parent claim 1 is allowable.

In claim 5, Applicant calls for the thickness of the frame in the bending zone is greater than the thickness of the supports (such as supports 100, 101 in the exemplary drawings). RATHMELL '059 fails to teach or suggest this, despite the unsupported assertion in the rejection.

3. RATHMELL '578

Applicant traverses the new rejections based upon RATHMELL '578 at least for the reasons advanced above regarding RATHMELL '059.

As mentioned above regarding RATHMELL '059, Applicant's invention *limits* the range of movement to a predetermined angle (between 30 and 45 degrees in dependent claim 16); the invention of RATHMELL '578 modifies the *flexibility* of the movement through an unspecified angle.

The assertion in the rejection (see page 6 of the Office action) that RATHMELL '578 comprises means for limiting bending of the frame at a predetermined angle is untrue. The statement can be based only upon speculation not supported by the disclosure of RATHMELL '578. Similarly, the assertion that RATHMELL '578 limits bending of the frame at a predetermined angle to prevent hyper-flexion is also untrue and can only be based upon speculation, i.e., unsupported by the disclosure of RATHMELL '578.

For the same reasons that RATHMELL '059 fails to teach or suggest the invention of claims 3 and 18, RATHMELL '578 fails to do so.

If the "frame" of RATHMELL '578 is element 8, the frame of RATHMELL has no membrane. In fact, the portion 5 of the boot beneath the element 8 is said to be "very flexible" in column 2, lines 31-32. Claims 3 and 18 should be allowed.

With regard to the rejection of claim 4 over RATHMELL '578, the Office action advises to "not the compressible material 5." Compressible material 5, however, is part of the boot; not part of a stiffener or a protective article for the boot. Accordingly, the rejection of claim 4 should be withdrawn for this additional reason.

With regard to claim 5, in which Applicant calls for the thickness of the frame in the bending zone to be greater than the thickness of the supports, RATHMELL '578 fails to teach or suggest same, despite the unsupported assertion in the rejection.

D. The Allowance of Claims 19, 30, 47 and Claims Depending Therefrom

Applicant kindly requests reconsideration and withdrawal of the rejection of independent claims 19, 30, 47, and the claims depending therefrom, based upon RATHMELL '578.

RATHMELL '578 discloses a boot that has means to permit the skier to change the rigidity of the boot quickly and conveniently to suit the immediate needs of the skier. See column 1, lines 35-39. To this end, RATHMELL '578 includes a separately formed removable stiffener 8 which interlocks with the projections and/or indentations on the basic boot shell. See column 1, line 67, to column 2, line 2.

As mentioned above, Applicant's invention, as specified in independent claims 19, 30, and 47, *limits* the range of movement to a maximum angle to prevent hyper-flexion. Applicant's claims 30 and 47 specify that angle to be no greater than 45 degrees, with dependent claim 29 specifying between 30-45 degrees. By contrast, the invention of RATHMELL '578 is disclosed as merely modifying the *flexibility* of the movement through an unspecified angle.

RATHMELL '578 discloses a one-piece stiffener 8 which is made of an elastomeric material. In fact, column 2, lines 16-20, describe the possibility of a boot having a plurality of stiffeners having different modulii of elasticity. In claim 22, Applicant calls for a compressible insert, although the insert is an added part of the protective article of claim 19.

With regard to the rejection of claim 22 over RATHMELL '578, the Office action advises to "not the compressible material 5." Compressible material 5, however, is part of the boot; not part of a stiffener or a protective article for the boot. Accordingly, the rejection of claim 22 should be withdrawn for this additional reason.

If the "frame" of RATHMELL '578 is element 8, the frame of RATHMELL '578 has no base, as specified in Applicant's claim 25, which depends from independent claim 19. In fact, the portion 5 of the boot beneath the element 8 is said to be "very flexible" in column 2, lines 31-32. Claim 25 should be allowed.

Applicant traverses the rejection of claim 13 under 35 USC §103(a) over RATHMELL '578, particularly as amended above. If the boot of RATHMELL '578 were to have a boot-tightening means over the stiffener 8, such means would appear to provide an interference with the function of the stiffener. Therefore, although boot tightening, such as provided by laces or otherwise, might be known to those skilled in the art, the modification of RATHMELL '578 in a manner that would meet the terms of claim 13 is not readily apparent; it would not have been obvious.

E. New Claims

Applicant has added new claims 48-54.

Claims 48 and 49 depend from claims 2 and 47, respectively, and call for the notch not to extend across the entire width between transverse sides of the rigid frame.

Of course, in both of the RATHMELL documents, the “notches” extend entirely across the width of their “frames.”

Claims 50, 51, and 52 depend from claims 1, 19, and 30, respectively, and call for the length of the frame, which extends in a direction between the opposed ends of the frame, to be greater than the transverse width of the frame.

Of course, in both of the RATHMELL documents, the opposite configuration is provided, i.e., the “frames” extend transversely to a greater extend than longitudinally. Further, Applicant submits that the functions of both devices of RATHMELL would be compromised if they were to have been modified to meet the terms of Applicant’s claims 50-52.

New claim 53 describes a boot such as that shown in Applicant’s Fig. 2, which includes a longitudinal opening extending within the high and low portions of the upper, and a tongue positioned beneath the upper, the frame being mounted upon the tongue, and a lacing extending across the longitudinal opening and above the frame and above the tongue. No such boot is taught or suggested by either RATHMELL documents, and one skilled in the art of ski boots would not have been motivated to have modified RATHMELL’s boots in a way that would have resulted in the invention of claim 53.

Applicant’s new claim 54 provides a description of tibial and instep supports (such as elements 100, 101 in the exemplary illustrated embodiment), whereby their lengths are greater than their thicknesses. This cannot be said of either of the RATHMELL devices.

SUMMARY AND CONCLUSION

The grounds of rejection advanced in the Office action have been addressed and are believed to be overcome. Reconsideration and allowance are respectfully requested in view of the amendment and remarks above.

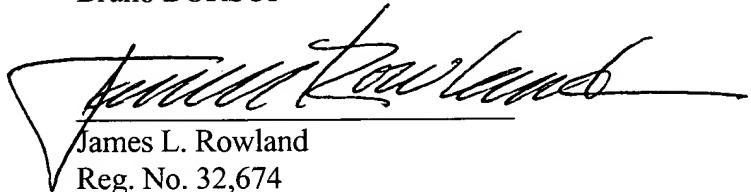
A check is attached for payment of a fee for additional claims in excess of 20, and for an extension of time for one month. No additional fee is believed to be due at this time. However, the

Commissioner is authorized to charge any fee required for acceptance of this reply as timely and complete to Deposit Account No. 19-0089.

Further, although an extension of time for a single month is believed to be necessary at this time, if it were to be found that an additional extension of time were necessary to render this reply timely and/or complete, Applicant requests an extension of time under 37 CFR §1.136(a) in the necessary increment(s) of month(s) to render this reply timely and/or complete and the Commissioner is authorized to charge any necessary extension of time fee under 37 CFR §1.17 to Deposit Account No. 19-0089.

Any comments or questions concerning this application can be directed to the undersigned at the telephone number, fax number, or e-mail address given below.

Respectfully submitted,
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